THE SOUTH AUSTRALIAN REPTILE FAUNA Part 1. OPHIDIA

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Fig. 1-3.

THIS systematic list of the South Australian Reptile Fauna contains comments on the variation and distribution of various species within the State. Three snakes are described as new. All species and races added since or omitted by Waite (1929) are marked with an asterisk.

FAMILY TYPHLOPIDAE.

TYPHLOPS UNGUIROSTRIS Peters.

Typhlops (Onychocephalus) unguirostris Peters, 1867, Monats. Akad. Berlin, p. 708, fig. 3.

TYPHLOPS PINGUIS Waite.

Typhlops pinguis Waite, 1897, Trans. Roy. Soc. S. Austr., xxi, p. 25, pl. III.

TYPHLOPS BITUBERCULATUS (Peters).

Onychocephalus bituberculatus Peters, 1863 (1864), Monats. Akad. Berlin, p. 233.

TYPHLOPS AUSTRALIS (Gray).

Anilios australis Gray, 1845, Cat. Liz. Brit. Mus., p. 135.

FAMILY BOIDAE.

MORELIA ARGUS VARIEGATA Gray.

Morelia variegata Gray, 1842, Zool. Mise., p. 43.

Loveridge (1934, p. 270) has summarized the reasons for the recognition of *argus*, and the resurrection of *Morelia*. Further, he expresses the opinion that the two colour phases are dimorphic forms and consequently considers *variegata* synonymous with typical *argus*. However, constant populations of both phases undoubtedly occur, all South Australian specimens so far examined being referable to *variegata*, and it is the author's opinion that *variegata* should be retained until sufficient material is available to thoroughly analyse the problem.

ASPIDITES MELANOCEPHALUS RAMSAVI Maeleay.

Aspidiotes ramsayi Maeleay, 1882, Proc. Linn. Soc. New South Wales, 6, p. 813.

FAMILY ELAPIDAE.

ASPIDOMORPHUS DIADEMA (Schlegel).

Calamaria diadema Schlegel, 1837, Phys. Serp., 2, p. 32.

DEMANSIA PSAMMOPHIS PSAMMOPHIS (Schlegel)

Elaps psammophis Schlegel, 1837, Phys. Serp., 2, p. 455. This species is fairly abundant in the drier regions of the State.

DEMANSIA TEXTILIS (Dumeril and Bibron).

Furina textilis Dumeril and Bibron, 1854, Erp. Gen., 7, p. 1,242.

South Australian examples of the species vary considerably in scalation and colouration. Specimens collected in the drier regions of the State differ from more southerly examples in possessing a larger, more prominent rostral and in showing a greater tendency to retain the darker juvenile markings in the adult. Eastern Australian juveniles, presumed to belong to the type race, the type locality being unknown, often possess as many as 50 narrow black crossbands. A minority of both adult and juvenile specimens examined from Central and Northern South Australian localities possess 12 or less broad black bands, the bands being present only on the anterior half of the body in several adult specimens. Other adults are uniform light brown often with occasional black scales or faint variegations. None of the many specimens examined from the vicinity of Adelaide and other localities to the south were found to possess darker body markings, although a black nape and head bands are invariably present in young specimens.

Loveridge (1934, p. 278) places a specimen taken at a locality on the Coorong, South Anstralia with three New South Wales specimens in the type race. In view of this decision all specimens with the less prominent rostral and uniform adult colouration, whose distribution appears to be correlated with the cooler climate, are herein regarded as belonging to D. *textilis textilis*, while those taken further north are referred to D. *textilis nuclealis*, although they are by no means typical of North-western Australian populations of the subspecies.

The following South Australian specimens were examined. D. textilis textilis: Adelaide and suburbs (27 specimens), Tailem Bend (2 specimens), Snowtown, Yorketown, Clarendon, Hallett's Cove, Hindmarsh Island, Minray Bridge (2 specimens), Naracoorte, Strathalbyn, Crafevs, Nortons Simmit, Ardrossan, Port Pirie, Wallaroo (2 specimens), Kangarilla, Millbrook, Hectorville, Angaston, Salisbury (2 specimens), Tanunda, Lucindale (2 specimens), Milang, Blackwood, Waterfall Gully, Marino, Williamstown, Echunga, Happy Valley, Port Lincoln (2 specimens), Middleton, Hackham, Wardang Island, Narrung, Encounter Bay.

D. textilis nuchalis: Ooldea (3 specimens), Penong (3 specimens), Streaky Bay, Marree (3 specimens), Kingoonya, Bordertown, Koonibba (3 specimens), Burra, Mern Merna (8 specimens), Hawker, Renmark, Mingary, Lake Eyre South (on south-eastern shore), Wharminga, Whyalla.

The position of the 2nd and 3rd upper labials relative to the preocular and the number of lower labials contacting the anterior chin-shields are very variable, the variation being independent of distribution.

The variety *inframacula* Waite occurs spasmodically and is not worthy of taxonomic recognition.

*DEMANSIA MODESTA (Gunther).

Cacophis modesta Gunther, 1872, Ann. and Mag. Nat. Hist., (4), 9, p. 35, pl. JII, fig. C.

A number of specimens belonging to this species have been taken in the North-western corner of the State in the Mann, Everard and Barrow Ranges.

*DEMANSIA ACUTIROSTRIS Sp. nov. (Fig. 1).

Holotype. S.A.M. R.3133. taken at lat, 28.26' S. and long. 137.24' E. on an island in Lake Eyre, South Anstralia. The specimen was taken in October, 1950, by Messrs. E. A. Brooks, M. Brooks and E. Price, while conducting a tour over the recently filled lake.

Diagnosis. Midbody scales in 17 rows; anal divided; ventrals 218; subcaudals in 55 pairs. Snout strongly depressed; lower jaw undershot by a distance almost equal to half the snout length. Uniform brown above with several broad darker cross-bands.

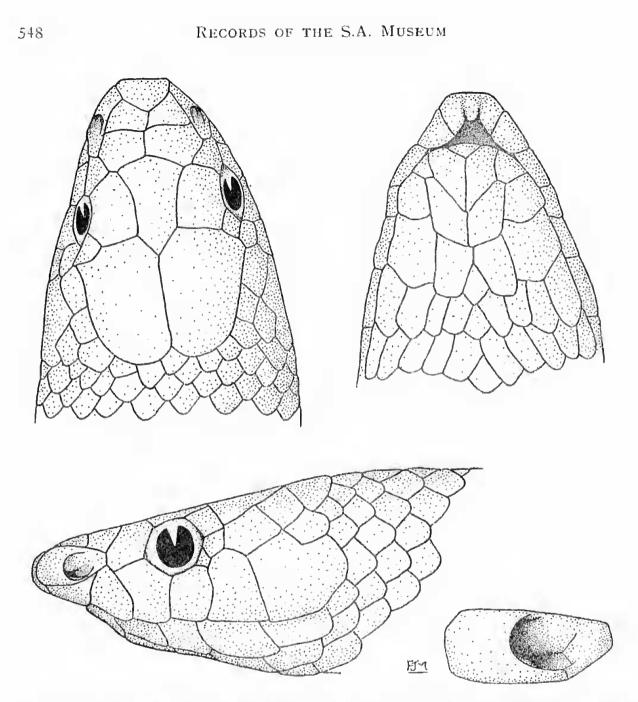


Fig. 1. Demansia acutirostris Mitchell. Dorsal, lateral and ventral views of the head of the holotype specimen; an enlarged view of the valvular nostril is also shown.

Type description. Eye moderate, its diameter a little longer than its distance from the mouth. Snout strongly depressed, square fronted, with a flat dorsal surface; lower jaw undershot by a distance almost equal to half the snout length; the portion of the rostral visible dorsally is much wider than long.

Frontal widest anteriorly, $1\frac{1}{2} \times$ wider than long, wider than the supraoculars, but constricted to a width slightly less than the supraoculars (see fig. 1). Nasal large, undivided, in contact with the preocular; nostril valvular, the nasal depression being large, but the actual aperture only a slit between three fleshy pads. Postoculars irregular, three on the left, the lower minute, two on the right; a single preceular. Temporals 1 + 2, the lower posterior set into the npper edge of the sixth upper labial; third and fourth of six upper labials subcenlar. First upper labial eurying well in under the snout. Midbody scales in 17 rows; ventral 218; subcaudals 55; anal divided.

The fangs are followed after a short intersparce by six or seven strongly grooved teeth; slightly recurved.

Dorsal surfaces light brown with several darker cross-bands of varying width. These bands are only faintly visible in the preserved specimen, but were prominent in life. The brown dorsal colouring extends well under the body to the ventrals, leaving a mid-ventral white stripe approximately one-third the total width of a ventral scale.

Measurements: 1,045 (900 + 145) mm.

This species is separable from all described members of the genus by the strongly depressed shout, markedly undershot lower jaw and greater development of the valvular nostril. In most species of *Demansia* there is a tendency for the nostril to be partially closed by a series of dermal folds, but in none is it developed to the extent shown in *acutirostris*.

The flat dorsal surface of the square tipped shout, the undershot lower jaw and valvular nostril suggest that this species is of burrowing habit. Its general appearance and colouration are most nearly approached by D, *textilis nuchalis* (Gunther).

PSEUDECHIS PORPHYRAICUS (Shaw).

Coluber porphyraicus Shaw, 1794, New Holland, p. 27, pl. X.

PSEUDECHIS AUSTRALIS (Gray).

Naja australis Gray, 1942, Zool. Miscell., p. 55.

PSEUDECHIS MICROLEPIDOTUS (McCoy).

Diemenia microlepidotus McCoy, 1879, Prod. Zool. Viet., dec. III, pl. xxiii, fig. 2-3.

1 have been unable to find a confirmed record of this species occurring in South Australia, although its recorded distribution in Northern Victoria and South-western New South Wales indicates that it may occur in parts of Eastern South Australia.

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DENISONIA SUPERBA (Gunther).

Hoplocephalus superbus Gunther (part), 1858, Cat. Snakes Brit. Mus., p. 217.

Waite (1929, p. 218) doubtfully included this species in his handbook, mentioning that he had not seen "an undoubted example" from South Australia. Recently, numerous examples have been received from localities in the upper Mount Lofty Ranges and the lower south-eastern districts of South Australia. A single juvenile specimen from Kangaroo Island has also been examined.

DENISONIA CORONATA (Schlegel).

Elaps coronatus Schlegel, 1837, Phys. Serp., 2, p. 454.

Two South Australian specimens of this species, S.A.M. R.1777 and R.2134, have been examined. Both were taken at Mount Compass.

DENISONIA CORONOIDES (Gnnther).

Hoplocephalus coronoides Guuther, 1858, Cat. Snakes Brit. Mus., p. 215.

All South Anstralian examples examined belong to the *marstersi* colour variety.

*DENISONIA NIGROSTRIATA BREVICAUDA SUbsp. nov.

Holotype. S.A.M. R.3137, Fowler's Bay, South Australia.

Paratypes. S.A.M. R.1230, Waikerie, South Australia; S.A.M. R.2273, Parrakie, South Australia; S.A.M. R.3136, nine adults and twelve juveniles taken at Sedan in the Murray Scrub, South Anstralia; S.A.M. R.3138, R.3140, Murray Bridge, South Australia; S.A.M. R.3141, Mount Wedge, *via* Elliston, South Australia and R.3139, Beetaloo Waterworks, South Australia.

Diagnosis. As the subspecific name suggests, South Australian examples of this species differ from the type race in possessing a much shorter tail with consequent decrease in the number of subcandal scales. The holotype of D, nigrostriata nigrostriata possessed 62, while Boulenger (1896, p. 344) records 50-64; Kinghorn (1929, p. 182) records the species as extending well down into New South Wales, but does not record any additional data, merely quoting Boulenger's variation. Kershaw (1918, p. 31) records the occurrence of the species in Victoria and National Museum locality records indicate the species to be restricted to the north-western corner of that State. The subcaudal scale counts of the fourteen adults in the present series vary from 23-29, the mean being $26 \cdot 1$. The ventral scale count is also lower, being 152-164 as compared to 180184 (Boulenger, op. cit.). In all other scale details these specimens agree closely with the type race.

The holotype is the largest specimen examined and measures $455 (415 \pm 50)$ mm. It is interesting to compare these measurements with those of Boulenger's type race topotype, viz. 380 (328 + 52) mm.

DENISONIA GOULDII (Gray).

Elaps gouldii Gray, 1841, in Grey's Journ. Exped. West. Austr., 2, p. 444, pl. V, fig. 1.

DENISONIA FLAGELLUM (McCoy).

Hoplocephalus flagellum McCoy, 1878 (decade II), Prod. Zool. Vict., p. 7, pl. XI, fig. 1.

This species is common in the Mount Lofty Rauges, South Australia.

DENISONIA SUTA (Peters).

Hoplocephalus sutus Peters, 1863, Monatsb. Akad. Berlin, p. 234.

In two excellent papers Kinghorn (1920 and 1929) has compiled sound reasons for synonymizing *H. frenatus* Peters, *H. frontalis* Ogilby, *H. stirlingi* Lucas and Frost, *D. frontalis* var. *propingua* De Vis and *D. forresti* Boulenger with *suta*.

The following data on South Australian specimens has been compiled as a supplement to Kinghorn's 1920 paper on Eastern Australian material.

S.A.M. R.130, Quorn, 157, 35; S.A.M. R.2628, Mern Merua (2 specimens), 176, 32; 164, 33; S.A.M. R.2658, Mern Merua, 163, 35; S.A.M., R.2781, Whittata, Andamooka Ranges, 154, 30; S.A.M. R.2598, Lyndhurst, 157, 31; S.A.M. R.2257, Aldgate (2 specimens), 159, 31; 161, 33; S.A.M. R.2373, Penong, 171, 34; S.A.M. R.3144, Caroona, *via* Port Augusta, 153, 31; S.A.M. R.3147, Leigh Creek (3 specimens), 167, 35; 164, 34; 166, 33. In all of these specimens the temporals are 2 + 2 and the nasal contacts the preocular. This data gives an overall variation of 153–176 ventrals and 30–35 subcaudals for South Australian specimens.

*DENISONIA BRUNNEA Sp. nov. (Fig. 2, 2a and b).

Holotype. S.A.M. R.3151, taken at Mount Wedge, near Elliston on the West Coast of Eyre Peninsula, South Australia by J. L. Harwood, Esq., on 29th July, 1907.

Diagnosis. Midbody scales in 17 longitudinal rows; ventrals 194; subcaudals 56; the anal is divided. The nasal forms sutures with the 1st, 2nd and 3rd upper labials. Uniform light brown dorsally, the supra-ocular scales being slightly darker; ventral surfaces uniform cream.

Type description. General proportions short, stout; head wide, distinct from the neck; snout rounded. Scale pattern fine; the length of a midventral scale is less than one-fifth of its width. Nasal undivided, joining the preocular and the 1st, 2nd, and 3rd upper labials; 3rd and 4th of six upper labials subocular; two postoculars. Maximum length of the internasals only half that of the prefrontals; frontal 1½ times longer than wide, as long as, but slightly wider than the supraoculars. Temporals 2 + 2, the lower anterior wedged between the 5th and 6th upper labials. Vertical diameter of the eye greater than its distance from the mouth and approximately equal to half the snout length.

Body scale counts and colour as given in the diagnosis.

The fangs are followed after an interspace by three short, stout conical teeth, these teeth being directed slightly backward. The fangs of this species appear to be large for its size, measuring almost 3 mm., while the following maxillary teeth measure only approximately $\frac{1}{2}$ mm.

Measurements. 284 (240 + 44) mm.

Affinities. The general form and high ventral scale counts do not suggest immediate relationship with any described species. The scale counts are most nearly approached by those of D. signata Jan. of Queensland and New South Wales, but a comparison with several specimens from Mount Tambourine, Queensland, indicates the present species to differ in possessing higher ventral and subcaudal counts, entirely different colouration, and several other scalation differences evident from fig. 2, 2a and b.

DENISONIA CURTA (Schlegel). (Fig. 2, 1a and b.)

Naja curta Schlegel, 1837, Phys. Serp. ii, p. 486.

Brachyaspis curta Boulenger, 1896, Brit. Mus. Cat. Snakes, III, p. 353.

Three South Australian specimens of this interesting species were examined, S.A.M. R.2371, from Tintinarra, S.A.M. R.3160, from Coombe, and S.A.M. R.2285, a specimen with no definite locality data, but found in association with other specimens taken near Salt Creek on the Coorong.

Because of the superficial similarity of these specimens to several members of the genus *Denisonia*, thought was given to the reasons for the separation of the species as genotype of *Brachyaspis*. This separation appears to have been based on three characters, the marked distinction of the head from the neck MITCHELL-SOUTH AUSTRALIAN REPTILE FAUNA

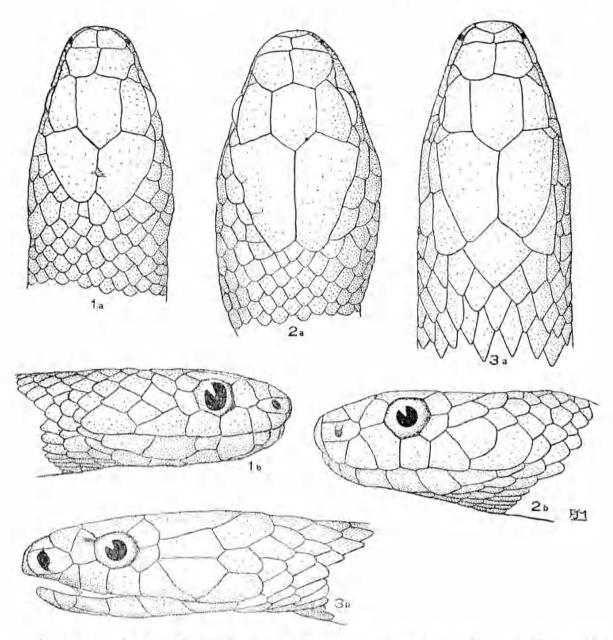


Fig. 2. la and lb: *Denisonia curta* (Schlegel); dorsal and lateral views of the head (S.A.M. R2371). 2a and 2b: *Denisonia brunnea* Mitchell. Dorsal and lateral views of the holotype specimen (S.A.M. R3133). 3a and 3b: *Notechis scutatus* var. Dorsal and lateral views of the head (S.A.M. R3143).

and body, the dividing of the uasal and the strong enlargement of the anterior mandibular teeth. Assuming Gunther's figure (1862, pl. IX, fig, 11) to be of accurate proportion, the first of these characters must be very variable as none of the present specimens show the head to be more distinct than that of D. sula or D. signata. Kinghorn (1931, fig. 1) also seems to indicate a less marked distinction than that figured by Gunther. The dividing of the nasal is also inconstant, two of these specimens possessing undivided nasals, while in the

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third it is partially divided by a shallow groove through the nostril. The anterior mandibular teeth arc enlarged and recurved, but not sufficient to make this species unique in the genus *Denisonia*. On the above grounds *Brachy*-aspis is referred to the synonomy of *Denisonia*. The fangs are followed after an interspace by four strongly recurved, solid teeth.

Noted variation of the material examined—midbody scales in 19 rows, 26–27 around the neck; ventrals 135–139; subcaudals 36–40, single; anal undivided. Temporals 3 + 3 except on the left side of R.2371, where it is 2 + 3; anterior temporals slightly larger than posterior. Kinghorn (1931, fig. 1) figures elongated anterior temporals. The shape and size of the frontal is variable.

ACANTHOPHIS ANTARCTICUS ANTARCTICUS (Shaw).

Boa antarctica Shaw, 1794, Nat. Miscell., pl. mxxxv.

ACANTHOPHIS PYRRHUS Boulenger.

Acanthophis pyrrhus Boulenger, 1898, Ann. and Mag. Nat. Hist., (7), 2, p. 75.

NOTECHIS SCUTATUS SCUTATUS (Peters).

Naja (Hamadryas) scutata Peters, 1861, Monatsb. Akad. Wiss. Berlin, p. 690.

In describing the supposed western subspecies occidentalis, Glauert (1948, p. 139–141) appears to have been convinced that the scale variation recorded by Kinghorn (1929a, p. 146) is typical. However, the type specimen according to Peters had body scale counts of 17, 173 and 45, so that the population from which Kinghorn took his data is not typical of the species, assuming the variation recorded in his handbook to be not distorted by typographical errors. A survey of the variation listed below indicates the body scale counts to be very unstable, and therefore of little diagnostic value. Further, the colour variation shown by specimens in the South Australian Museum collection completely envelops that recorded in earlier references to that species.

This casts doubt on the recognition of *occidentalis* as a western subspecies, the only evident differences being the predominance of one of the many colour patterns shown by South Australian specimens and the possession of 17 rather than 19 midbody scales.

As recorded for Western Australian specimens by Glauert (*op. cit.*), South Australian Tiger Snakes are restricted to swampy habitats.

The following body scale data has been considered. Midbody scales in 15 rows; Tasmania (5 specimens), possessing 172, 172, 168, 164, 172 ventrals and ?, 54, 50, 53 and 48 subcaudals.

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Midbody scales in 17 rows: Warren River, Western Australia (2 specimens), 159, 159 ventrals and 44, 46 subcaudals; near Rendelsham, South Australia (2 specimens), 167, 161 ventrals and 49, 44 subcaudals; Yorke Peninsula, South Australia, 170 ventrals and 46 subcaudals; Mannum, South Australia, 168 ventrals and 47 subcaudals; Sleaford Mear, Eyre Peninsula, South Australia, 167 ventrals and 47 subcaudals; Flinders Island, Bass Strait, 177 ventrals and 53 subcaudals; Tasmania (7 specimens). 173, 173, 170, 173, 169, 166, 159 ventrals and 50, 52, 51, 56, 55, 54, 49 subcaudals; Hobart, Tasmania, 179 ventrals and 50 subcaudals; Kangaroo Island, South Australia, 154 ventrals and 51 subcaudals; Junction of Murray and Darling Rivers (3 specimens), 168, 168, 169 ventrals and 36, 46, 54 subcaudals.

Midbody scales in 19 rows: Milang, South Australia, 163 ventrals and 47 subcaudals; Mannum, South Australia (2 specimens), 165, 163 ventrals and 47, 47 subcaudals; Murray Bridge (2 specimens), 160, 163 ventrals and 48, 52 subcaudals; Crowes, Otway Ranges, Victoria, 164 ventrals and 50 subcaudals; Penneshaw, Kangaroo Island, South Australia, 169 ventrals and 45 subcaudals; Eleanor River, Kangaroo Island, South Australia, 175 ventrals, 48 subcaudals; Deep Creek, Kangaroo Island, South Australia, 184 ventrals and 45 subcaudals; Sydney, New South Wales (2 specimens), 175, 179 ventrals and 56, 54 subcaudals; New South Wales, 185 ventrals and 61 subcaudals; Kangaroo Island, South Australia (2 specimens), 178, 172 ventrals and 54, 51 subcaudals; Prahran, Victoria, ventrals not quoted, 49 subcaudals; Junction of Darling and Murray Rivers, 168 ventrals and 50 subcaudals.

Data taken from many specimens without accurate locality data was also considered. Glauert (1948) records variation of 17 (32 specimens) to 19 (8 specimens) midbody scales, 135 (1 specimen) and 146-162 (39 specimens) ventral scales and 30-52 subcaudals for the type series of *occidentalis*. Kinghorn (1929, p. 146) records a variation of 128-136 ventrals and 30-35 subcaudals. In addition to the South Australian Museum collection the following references were utilized in the compilation of the above list-Boulenger (1896, p. 352), Kinghorn (1921, p. 145), Loveridge (1934, p. 290), and McCoy (1878, pp. 11-12).

S.A.M. R.3143 from Tailem Bend, South Australia, is an interesting specimen. It possesses several aberrant characters which have been considered worth describing and figuring (see fig. 2, 3a and b). Midbody scales in 19 rows; ventrals 165; subcaudals 56, all single. The dorsal scales are very clongate, more elongate than those of an average specimen of the same total length. A large rhomboidal occipital is present. The colouring is also distinctive, the head being dark grey; body with a wide coppery brown middorsal stripe lightening

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ventrolaterally to bright lemon yellow ventrally, all colours deepening posteriorly. Underside of the head white with a yellow tinge on the lower anterior temporal and 4th and 5th upper labials. Colours described from life. The specimen measures 388 (327 + 61) mm.

Notechns soutatus, var. Niger Kinghorn.

Notechis sculatus var. niger Kinghorn, 1921, Rec. Aust. Mns., xiii, 4, p. 145.

This snake was originally described as a melanotic variety restricted to Kangaroo Island, South Australia. However, specimens identical with the Kangaroo Island examples have recently been taken at localities on the southern ends of Yorke and Eyre Peninsulas, South Australia.

The reoccurrence of this colour pattern in two areas totally independent of the type locality raises an interesting problem. Is this an example of impressed variation or has it a definite genetic basis? Specimens taken in the lower southeastern districts of South Australia resemble Tasmanian specimens in showing a darkening of the dorsal colouring with consequent obliteration of the crossbands, but none show the dark ventral colouring characteristic of *niger*. The body scale variation falls within that recorded for the type race and is included in the above list.

NOTECHIS ATER (Krefft).

Hoplocephalus aler Krefft, 1866, Proc. Zool. Soc. London, p. 370.

It is noted that Glauert (1948, p. 141) places *ater* as a subspecies of *scutatus*. As but a single example of this snake has been taken, the species being unrepresented in the South Australian Museum collection in spite of extensive collecting in the Flinders Ranges, our present knowledge gives no grounds for regarding it a subspecies of *scutatus*.

RHYNCHOELAPS BERTHOLDI (Jan.)

Elaps bertholdi Jan., 1859, Rev. et Mag. Zool., p. 123.

RHYNCHOELAPS FASCIOLATUS (Gunther).

Rhinelaps fasciolatus Gunther, 1872, Ann. and Mag. Nat. Hist., (4), ix, p. 34, pl. v, fig. 4.

*At least one additional species of *Rhynchoelaps* occurs in South Australia, and specimens have been identified tentatively as R. semifasciata Gunther or R. australis Krefft. However, the group is badly in need of revision, one object

of such work being to determine the stability of certain scale details used to characterize several of the recently described "shovel snonted" species. This is being undertaken by Mr. J. R. Kinghorn of the Australian Museum, Sydney, and a selection of South Australian Museum specimens has been sent for his examination. His identification of the South Australian species is awaited with interest.

*FURINA ANNULATA (Gray).

Calamaria annulata Gray, 1841, in Grey's Journ. Exped. West. Austral., 2, p. 443.

This species is quite common throughout the State.

*FURINA BIMACULATA Dumeril and Bibron.

Furina bimaculata Dumeril and Bibron, 1854, Erpet, Gen., 7, p. 1,240.

A single specimen, S.A.M. R.2302, was collected at Kingoonya, South Australia.

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